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HOWARTH REVERSIBLE SASH CENTERS

1914



**MICHIGAN ENGINE
VALVE CO.**

Sole Manufacturers

DETROIT, MICH.



HOWARTH REVERSIBLE SASH CENTERS

1914

Destroy All
Previous Issues

T. B. & H. S. Hendrickson

Philadelphia Representatives

OFFICE: 521 Commerce St.

BOTH PHONES

MICHIGAN ENGINE VALVE CO.

Sole Manufacturers

115 and 117 W. Columbia Street,
DETROIT, MICH.

TO ARCHITECTS, BUILDERS *and* THE HARDWARE TRADE

We take great pleasure in presenting our patrons with our Illustrated Catalogue and Price List of 1914. We have availed ourselves of this opportunity to more fully illustrate our line of Howarth Reversible Sash Centers with complete details for each Center, and on examining our revised Catalogue you will readily see that we have greatly increased our variety of sizes to meet the constantly increasing demand for the Howarth Reversible Sash Centers illustrated herein.

Hoping that our efforts will, as in the past, be rewarded by the liberal and continued orders of our customers and the general trade, we are,

Yours respectfully,

MICHIGAN ENGINE VALVE CO.

TERMS

All goods are sold payable in thirty days' time from date of invoice.

A cash discount of TWO PER CENT will be allowed if paid within ten days from date of invoice.

All goods are sold F. O. B. Detroit, Mich., and will be shipped by freight, unless otherwise ordered.

We allow no claims for damages after goods have been received for in good order by transportation company.

All claims for shortages and errors must be made within ten days from date of shipment.

All remittances must be made by draft on New York or Detroit without allowances for exchange or express charges.

Discounts from list price will be quoted to the hardware trade on application.

Prices subject to change without notice.

REMARKS



SEE APPENDED
INFORMATION

HOWARTH S A S H CENTERS

HAVE been on the market for over fifteen years, and we have over 1,500,000 sets in use, which is good evidence that they are what we recommend them to be. They are recommended by all the leading architects throughout the United States and Canada. We manufacture Centers for all classes of buildings, such as residences, schools, churches, office buildings, court houses, post-offices, railroad depots, factories, car barns, power houses, etc.

We finish them in any special finish that may be required to match other hardware finish specified.

5 REASONS WHY

HOWARTH REVERSIBLE SASH CENTERS ARE AT THE HEAD

FIRST—You can pivot any window made on *Howarth Reversible Sash Centers*.

SECOND—*Howarth Reversible Sash Centers* are so constructed as to enable you to retain a double stop all around the sash, thereby making a perfect weather-proof window. Hung on pivots.

THIRD—*Howarth Reversible Sash Centers* are so made as to allow the reversing of all windows for cleaning purposes, and entirely doing away with the danger and inconvenience of climbing outside to wash windows.

FOURTH—*Howarth Reversible Sash Centers* are made and finished in the best possible manner. Every Center that we make has machine finished bearings, thereby making a Center that will always work smooth and perfect.

FIFTH—*Howarth Reversible Sash Centers* are less expensive to use than any other Centers made, if the parties using them want a weather-proof window and a window that will reverse for cleaning.

TO THE HARD- WARE TRADE

HOWARTH Reversible Sash Centers are put up in neat, strong pasteboard boxes, suitable for placing on the shelves with the best grades of hardware. Each package is marked and numbered in a neat and distinct manner, so that one can tell at a glance just what kind of goods each package contains.

Howarth Reversible Sash Centers are made up in the following finishes for regular stock goods:

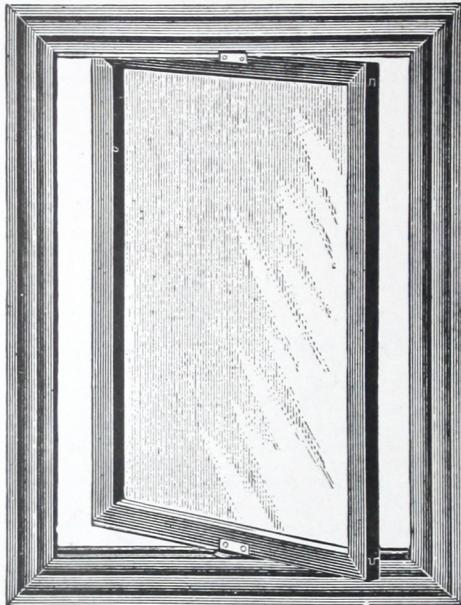
IRON—DEAD BLACK IRON
AND
BRASS—POLISHED BRASS

Howarth Reversible Sash Centers can be furnished in any special finish to match finish of other hardware. Prices quoted on same on application.

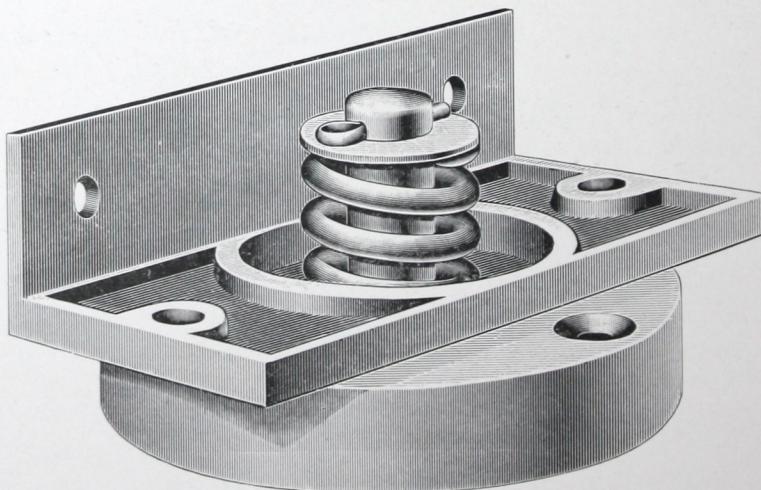
Howarth Sash Centers

AUTOMATIC

Nos. 600 B to 0604



NOTE—Be sure and make bottom rail of sash from 4 to 6 inches wide, according to size of sash.



Patented October 2, 1900. Architects please specify by Number
Detail page 26.

Golden Improved Automatic Sash Centers

For Large Windows

Nos. 600 B to 0604

This Center is particularly adapted for hanging large windows hung on top and bottom.

This Center works automatically, and is made with a very heavy spring, and will hold the window in any position. Make the window frame in the usual way. They need no special frame. See detail page 26.

Directions for applying Centers: The Centers are to be put on the sash, sash slid in place. Close the sash and screw plates to head and sill, swing the sash outside inside, set glass, reverse sash and plant stops on frame. Be sure and add the drip strip on the bottom rail as shown in detail, page 26.

IRON—DEAD BLACK.

Special Finishes
See Below

No. 600B	1 $\frac{3}{8}$ to 1 $\frac{1}{2}$ inch sash.....	per set, \$1.20	\$2.00
No. 600	1 $\frac{3}{4}$ to 1 $\frac{7}{8}$ inch sash.....	per set, 1.40	2.20
No. 601	2 to 2 $\frac{1}{8}$ inch sash.....	per set, 1.85	2.65
No. 602	2 $\frac{1}{4}$ to 2 $\frac{3}{8}$ inch sash.....	per set, 2.20	3.10
No. 603	2 $\frac{1}{2}$ to 2 $\frac{5}{8}$ inch sash.....	per set, 2.50	3.50
No. 604	3 inch sash	per set, 2.85	3.95

CAST BRASS—POLISHED.

No. 0600B	1 $\frac{3}{8}$ to 1 $\frac{1}{2}$ inch sash.....	per set, \$4.40	\$5.05
No. 0600	1 $\frac{3}{4}$ to 1 $\frac{7}{8}$ inch sash.....	per set, 4.60	5.25
No. 0601	2 to 2 $\frac{1}{8}$ inch sash.....	per set, 4.85	5.50
No. 0602	2 $\frac{1}{4}$ to 2 $\frac{3}{8}$ inch sash.....	per set, 5.40	6.10
No. 0603	2 $\frac{1}{2}$ to 2 $\frac{5}{8}$ inch sash.....	per set, 6.00	6.75
No. 0604	3 inch sash	per set, 7.00	7.75

N. B.—When ordering this class of centers give thickness of sash.

ONE SET PACKED IN EACH BOX—Brass and Plated goods packed with screws.

For detail see page 26.

SPECIAL FINISHES:—Price List for special finishes in Iron List above is for iron centers finished in Polished Brass, Bronze, Antique Copper or Sanded Statuary Brass.

Price List for special finishes in Brass List is for Brass centers finished in Bronze, Nickle or Sanded Statuary Brass.

Prices on other finishes quoted on application.

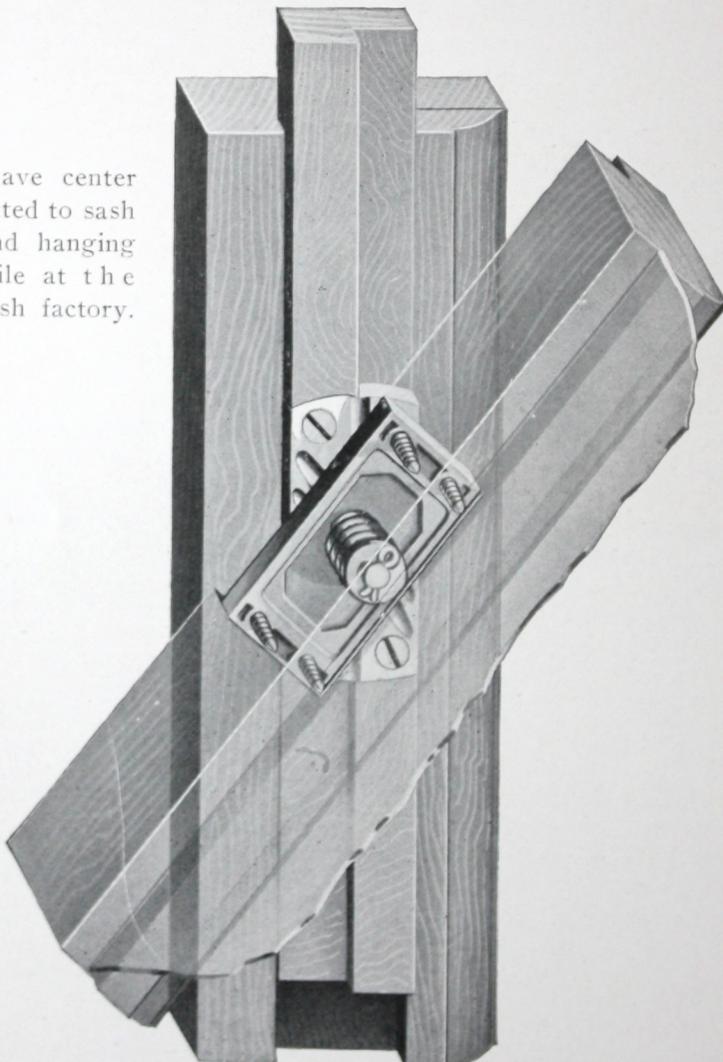
TELEGRAPH CODE PAGE 36.

Howarth Friction Sash Center

An Ideal Pivot

For Office Buildings, Residences, Public
Buildings, Factories, Etc.

Have center
fitted to sash
and hanging
stile at the
sash factory.



Patented Oct. 2, 1900.
Nos. 300 A to 0306

Detail page 27.

Price List page 11.

Architects please specify by number.

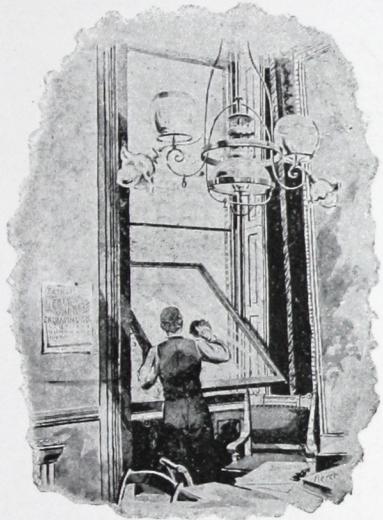
Howarth Friction Sash Centers

Nos. 300 A to 0306

This friction Center will hang any kind or thickness of Sash from $1\frac{1}{8}$ inch to 3 inches thick.

LARGE SINGLE WINDOWS

Can be hung on top and bottom or sides with these Centers. They need no adjusters, as the friction will hold the Sash in any position.



For Windows Hung On Cords and Weights

This center has no equal. The sash can be lowered or raised same as any double hung Sash and can be reversed outside inside for cleaning purposes. This feature makes it an ideal center for SCHOOL HOUSES, PUBLIC BUILDINGS of all classes, WAREHOUSES, OFFICE BUILDINGS, etc., particularly those over two stories high, where the window cleaner is obliged to stand outside on the sill to do his work at a great risk of falling.

Factory Windows

They are just the thing for Factory Windows, where one or two Sash are to be swung in an opening and where plank frames are to be used and ventilation is required from the full opening. They can be adjusted at will to direct the air towards the ceiling or floor. The friction will hold them in any position they may be placed for this purpose.

For Inside or Outside Transoms

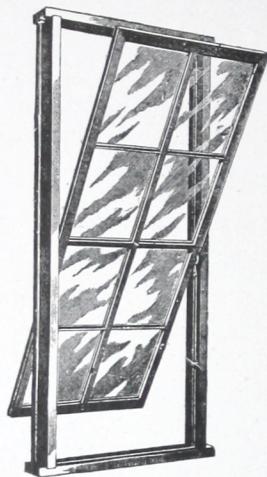
There is nothing better; they will hold the Transoms in any position without Transom Lifts. Operate with a pole and use a Transom Catch to lock when closed.

Directions for Applying

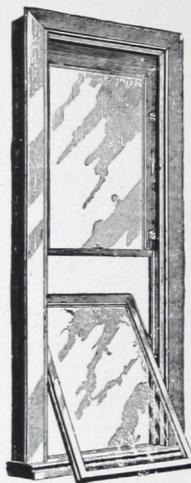
Rabbet the Sash on the outside from the top of the Sash to the center and on the inside from the center down to the bottom of the Sash. Make the Hanging Stile to conform with this reverse rabbet. Make rabbet $\frac{1}{2}$ inch wide and half the thickness of Sash deep (see detail page 27). Fit Center to the Sash, then to the Hanging Stile. The top and bottom plates of these Centers are assembled at right angle with each other so that they can be easily screwed in place on both the Hanging Stile and Sash. After the Center is firmly screwed in place, the Hanging Stile can be closed on the Sash and fitted to the opening of the frame the same as an ordinary Sash. The Centers should be applied at the factory before the Sash are brought to the building.

Howarth Friction Sash Centers

Nos. 300 A to 0306



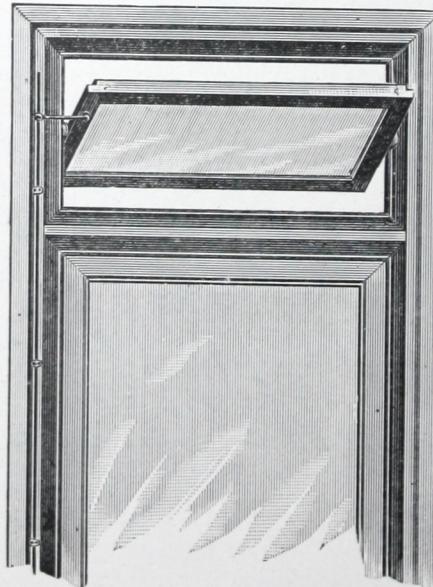
Plank Frame Window



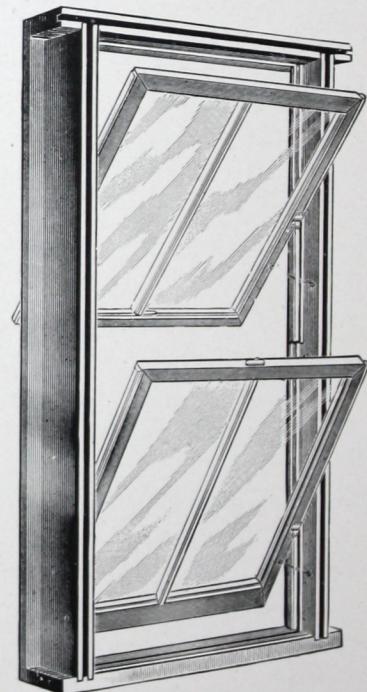
Sliding Window



Window Transom



Door Transom



Double Hung Plank Frame

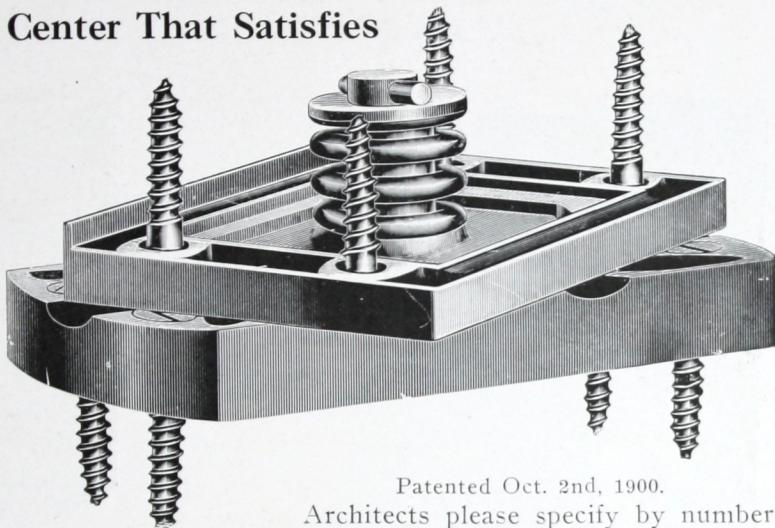
These are some of the places where the Howarth Friction Centers can be used.

See Detail page 27.

Howarth Friction Sash Centers

Nos. 300 A to 0306

A Center That Satisfies



Patented Oct. 2nd, 1900.

Architects please specify by number.

PRICE LIST IRON—DEAD BLACK.

		Special Finishes See Below
No. 300A,	for 1 1/8 inch sash.....	\$1.00
No. 300,	for 1 3/8 inch sash.....	1.00
No. 301,	for 1 3/4 inch sash.....	1.15
No. 302,	for 2 inch sash.....	1.40
No. 303,	for 2 1/4 inch sash.....	1.70
No. 304,	for 2 1/2 inch sash.....	2.00
No. 305,	for 2 3/4 inch sash.....	2.30
No. 306,	for 3 inch sash.....	2.60

CAST BRASS—POLISHED.

No. 0300A,	for 1 1/8 inch sash.....	\$4.40	\$5.05
No. 0300,	for 1 3/8 inch sash.....	4.40	5.05
No. 0301,	for 1 3/4 inch sash.....	4.60	5.25
No. 0302,	for 2 inch sash.....	4.85	5.50
No. 0303,	for 2 1/4 inch sash.....	5.40	6.10
No. 0304,	for 2 1/2 inch sash.....	6.00	6.75
No. 0305,	for 2 3/4 inch sash.....	6.50	7.25
No. 0306,	for 3 inch sash.....	7.00	7.75

ONE SET PACKED IN EACH BOX—Brass and Plated goods packed with screws.

For Detail See Page 27.

SPECIAL FINISHES:—Price List for special finishes in Iron List above is for iron centers finished in Polished Brass, Bronze, Antique Copper or Sanded Statuary Brass.

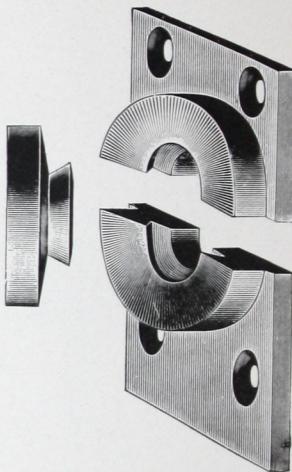
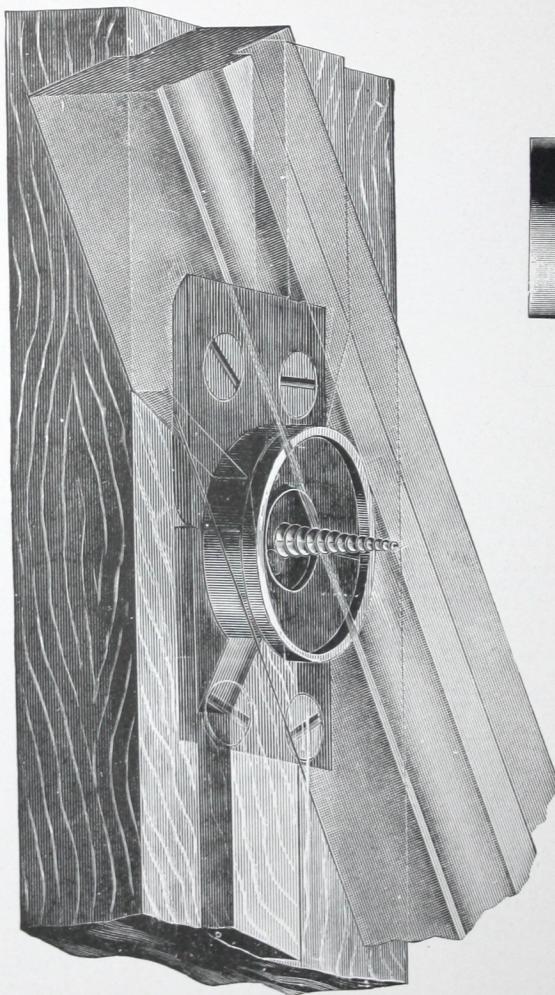
Price List for special finishes in Brass List is for Brass centers finished in Bronze, Nickle or Sanded Statuary Brass.

Prices on other finishes quoted on application.

TELEGRAPH CODE PAGE 36.

Howarth Sash Centers

Nos. 50 to 052



Patented June 20, 1893.

Architects please specify by Number. Brass and plated goods packed with Screws.

Detail page 28.

Howarth Reversible Sash Centers

Nos. 50 to 052

Are especially adapted for all heavy outside plate glass transoms and windows, when such transoms or windows are to be pivoted on the sides.

These Centers are made with concave, convex and a dovetail joint and machine finished to give a perfect bearing and weather-proof joint.

How to Apply Centers

Mortise plates into stile flush, screw bottom plate fast. Mortise studs into sash, hang sash in place, turn sash across opening and put upper plate in place, then plant stops on to stile to fit in rabbet of sash. Bevels on end of stops touching centers may be cut any angle for reversing the sash. Sash should always be reverse rabbetted so as to swing in from the top. (See detail page 28.)

IRON—DEAD BLACK.

Special
Finishes
See Below

No. 50 for 1 $\frac{3}{4}$ to 2 inch sash.....	per set, \$.90
No. 51 for 2 $\frac{1}{4}$ to 2 $\frac{3}{4}$ inch sash.....	per set, 1.00
No. 52 for 3 to 4 inch sash.....	per set, 2.00

\$1.80
1.90
3.00

CAST BRASS—POLISHED.

No. 050 for 1 $\frac{3}{4}$ to 2 inch sash.....	per set, \$2.00	\$2.65
No. 051 for 2 $\frac{1}{4}$ to 2 $\frac{3}{4}$ inch sash.....	per set, 3.00	3.70
No. 052 for 3 to 4 inch sash.....	per set, 6.00	6.90

ONE SET PACKED IN EACH BOX—Brass and Plated goods packed with screws.

For Detail See Page 28.

SPECIAL FINISHES:—Price List for special finishes in Iron List above is for iron centers finished in Polished Brass, Bronze, Antique Copper or Sanded Statuary Brass.

Price List for special finishes in Brass List is for Brass centers finished in Bronze, Nickle or Sanded Statuary Brass.

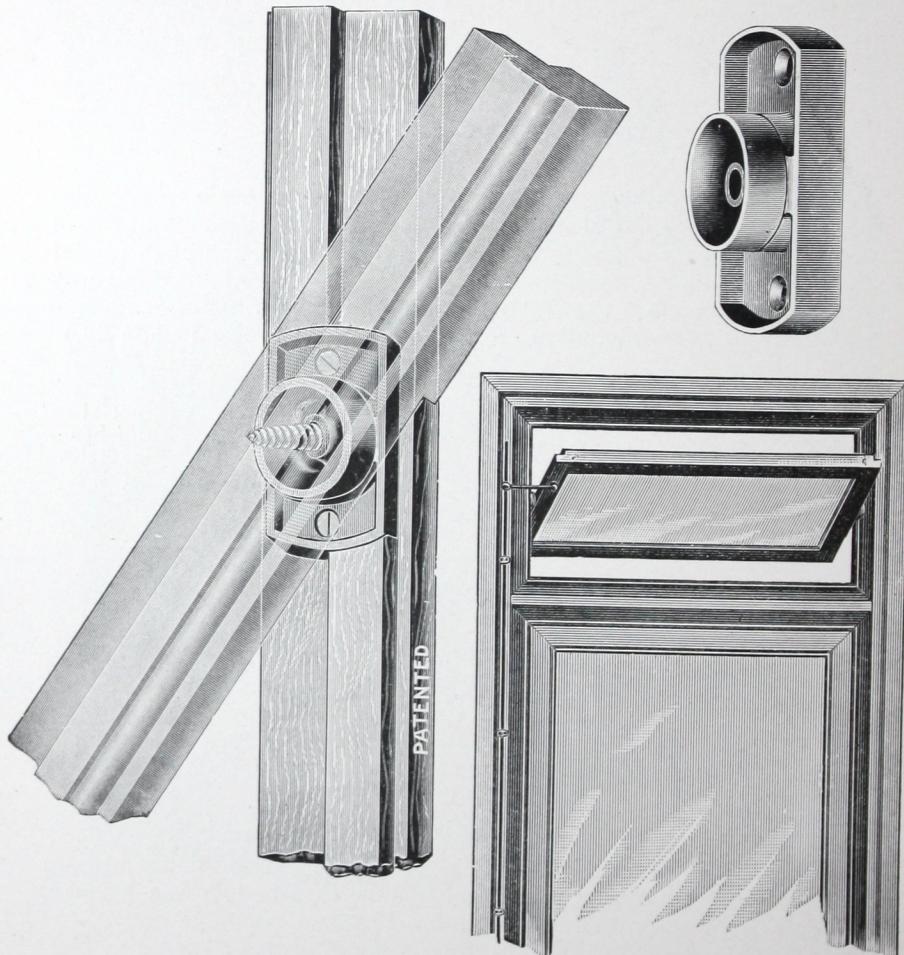
Prices on other finishes quoted on application.

TELEGRAPH CODE PAGE 36.

Howarth Sash Centers

Nos. 30 to 034

For Inside Transom Work



Architects please specify by number.
Brass and plated goods packed with screws.
Detail page 29.

Howarth Sash Centers

Nos. 30 to 034

For Inside Transoms

These centers are especially adapted for hanging inside transoms in all classes of Public Buildings. It makes the transom just as tight, when closed, as though it was hinged at the top or bottom, and all will agree that a transom hung on pivots works much more perfect than when hinged, from the fact the transom when pivoted is evenly balanced, consequently does not throw so much weight on the transom lift.

This center is also used very largely for hanging round or elliptical windows.

How to Apply Centers

Use a Hanging Stile fitted to Sash with a reverse rabbet as shown on detail page 29. Rabbet the Sash on the outside from the top of the Sash to the center and on the inside from the center down to the bottom of the Sash, Hanging Stile to conform to this reverse rabbet. Make rabbet $\frac{1}{2}$ inch wide and half the thickness of the sash deep. Fit center to the Sash, then to the Hanging Stile. This work should be done at the factory before the Sash are brought to the building.

IRON—DEAD BLACK.

		Special Finishes See Below
No. 30	for $1\frac{3}{8}$ inch sash.....	per set, \$0.40
No. 31	for $1\frac{1}{2}$ inch sash.....	per set, .50
No. 32	for $1\frac{3}{4}$ inch sash.....	per set, .60
No. 33	for 2 inch sash.....	per set, .70
No. 33 $\frac{1}{2}$	for $2\frac{1}{8}$ inch sash.....	per set, .75
No. 34	for $2\frac{1}{4}$ inch sash.....	per set, .80

CAST BRASS—POLISHED.

No. 030	for $1\frac{3}{8}$ inch sash.....	per set, \$1.20	\$1.85
No. 031	for $1\frac{1}{2}$ inch sash.....	per set, 1.60	2.25
No. 032	for $1\frac{3}{4}$ inch sash.....	per set, 2.00	2.65
No. 033	for 2 inch sash.....	per set, 2.25	2.90
No. 033 $\frac{1}{2}$	for $2\frac{1}{8}$ inch sash.....	per set, 2.40	3.10
No. 034	for $2\frac{1}{4}$ inch sash.....	per set, 2.50	3.20

ONE SET PACKED IN EACH BOX—Brass and Plated goods packed with screws.

For Detail See Page 29.

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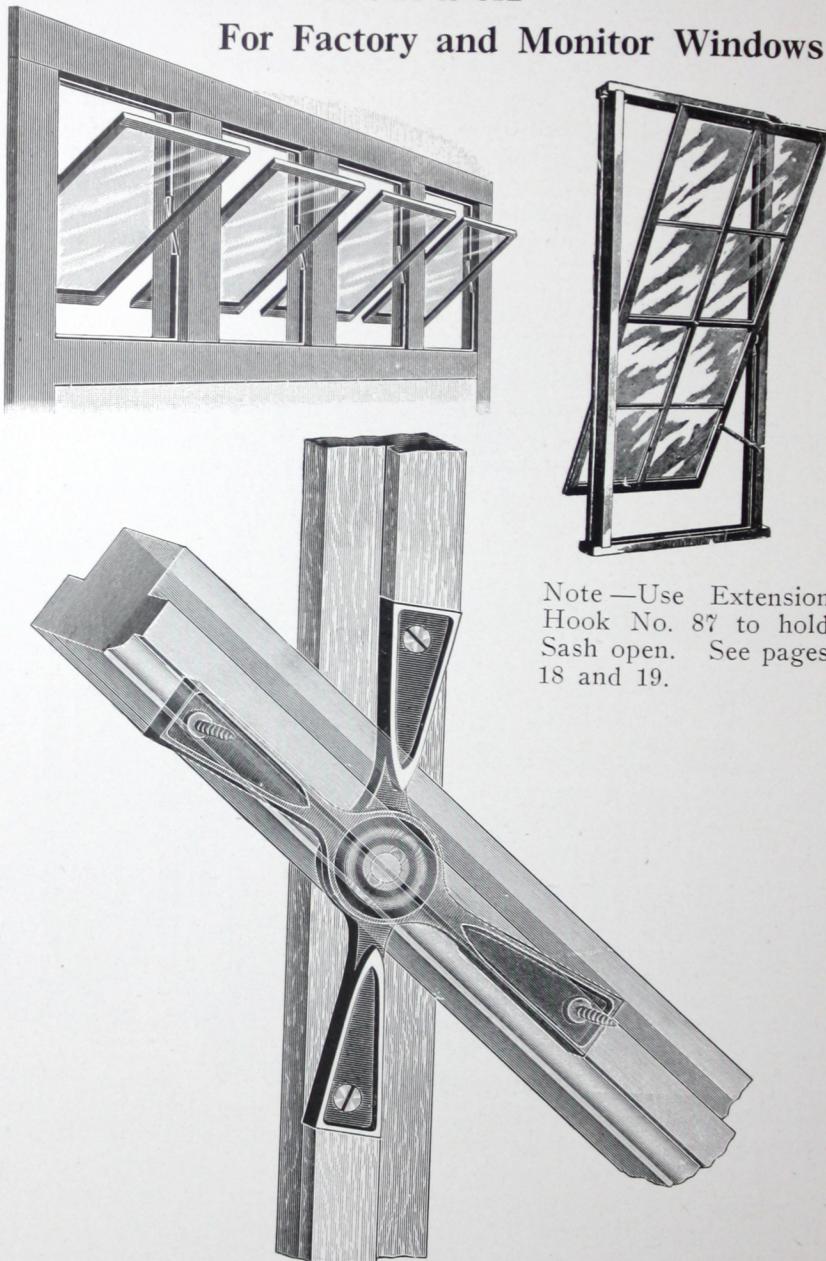
Prices on other finishes quoted on application.

TELEGRAPH CODE PAGE 36.

Howarth Sash Centers

Nos. 10 to 012

For Factory and Monitor Windows



Note—Use Extension Hook No. 87 to hold Sash open. See pages 18 and 19.

Architects please specify by number.

See detail page 30.

Howarth Sash Centers

Nos. 10 to 012

For Factory and Monitor Windows

These Centers are particularly adapted for Sash hung on the sides; for Single or Double Hung Windows with plank frames, for Factory or Monitor Windows or any place where windows are to be operated in a battery with Sash operators. They will give the ventilation of the full opening and Sash can be reversed inside out for cleaning.

Use a reverse rabbet and Hanging Stile in connection with these Centers, as shown on detail page 30. This construction will allow for shrinking and swelling of the Sash and will also give the Sash a good clearance for swinging.

Center should be fitted to the Sash and Hanging Stile at the factory before Sash are brought to the building.

IRON—DEAD BLACK.

Special
Finishes
See Below

No. 10 for 1 $\frac{3}{8}$ to 1 $\frac{1}{2}$ inch sash.....	per set, \$0.40	\$1.20
No. 11 for 1 $\frac{3}{4}$ to 2 inch sash.....	per set, .50	1.30
No. 12 for 2 $\frac{1}{4}$ to 2 $\frac{1}{2}$ inch sash.....	per set, .80	1.60

CAST BRASS—POLISHED.

No. 010 for 1 $\frac{3}{8}$ to 1 $\frac{1}{2}$ inch sash.....	per set, \$1.70	\$2.35
No. 011 for 1 $\frac{3}{4}$ to 2 inch sash.....	per set, 2.60	3.25
No. 012 for 2 $\frac{1}{4}$ to 2 $\frac{1}{2}$ inch sash.....	per set, 4.40	5.15

ONE SET PACKED IN EACH BOX—Brass and Plated goods packed with screws.

For Detail See Page 30.

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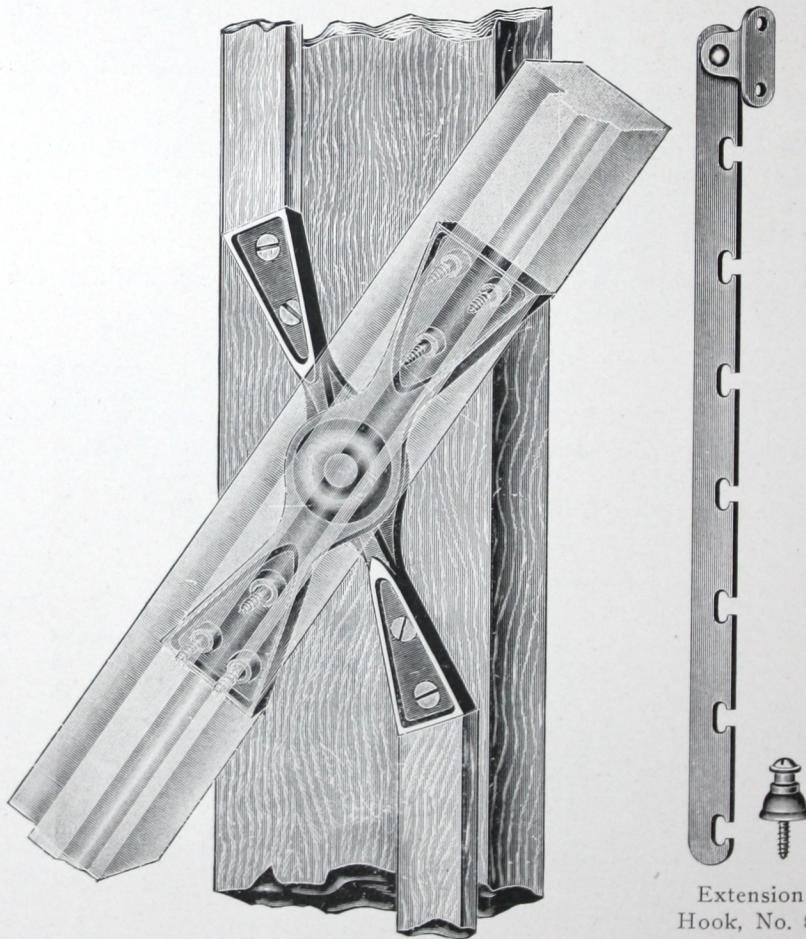
Prices on other finishes quoted on application.

TELEGRAPH CODE PAGE 36.

Howarth Sash Centers

Nos. 20 to 022

For Foundry Windows



Extension
Hook, No. 87

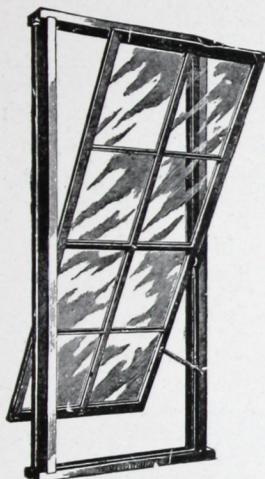
Architects please specify by number.

Detail page 31

Howarth Sash Centers

Nos. 20 to 022

For Factory and Foundry Windows



These Centers are intended for Factories, Foundries, Car Sheds, Barns, Stables, Machine Shops, etc., where an inexpensive construction for windows is wanted. **The Sash require no rabbetting**, the Frames can be plain plank frames, with stops nailed to them for the Sash to stop against as shown on detail page 31.

These Centers are strong and serviceable, and will allow the Sash to turn outside in for cleaning. If wire guards are to be used fasten them to the Sash. The

Extension Hooks No. 87, as shown on page 18, make an ideal fixture for holding these Sash open at different angles; they have no thumb screws to get out of order and are always ready and positive.

IRON—DEAD BLACK.

Special
Finishes
See Below

No. 20 for 1 $\frac{3}{8}$ inch sash.....	per set, \$0.50	\$1.30
No. 21 for 1 $\frac{3}{4}$ inch sash.....	per set, .60	1.40
No. 22 for 2 $\frac{1}{4}$ inch sash.....	per set, .90	1.70

CAST BRASS—POLISHED.

No. 020 for 1 $\frac{3}{8}$ inch sash.....	per set, \$2.30	\$2.95
No. 021 for 1 $\frac{3}{4}$ inch sash.....	per set, 3.00	3.65
No. 022 for 2 $\frac{1}{4}$ inch sash.....	per set, 4.75	5.50

EXTENSION HOOKS.

No. 87 Iron	each, \$0.30	\$1.00
No. 087 Brass	each, 1.00	1.60

ONE SET PACKED IN EACH BOX—Brass and Plated goods packed with screws.

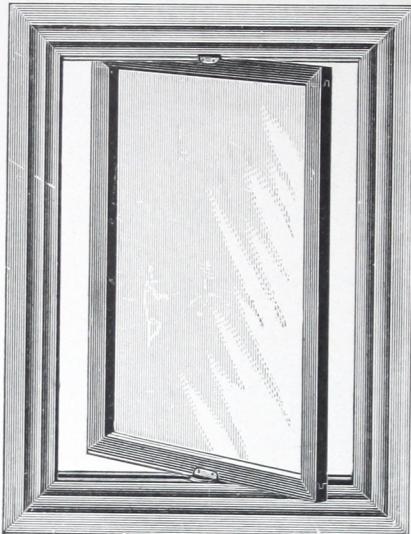
For Detail See Page 31.

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Prices on other finishes quoted on application.

TELEGRAPH CODE PAGE 36.

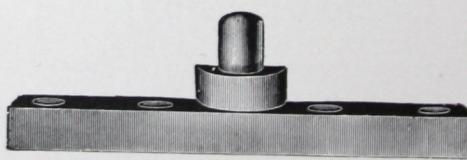
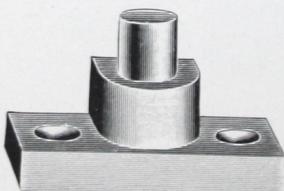
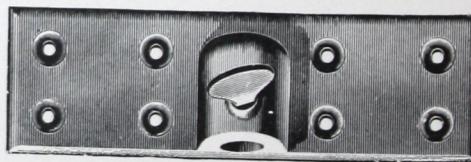
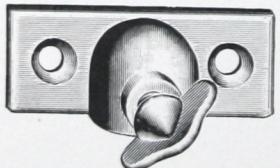
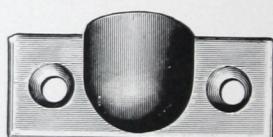
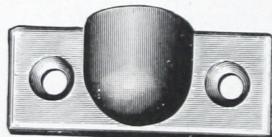
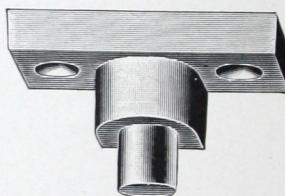
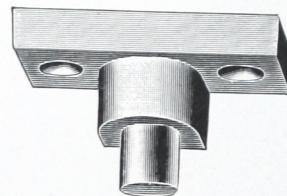


Howarth Sash Centers

Nos. 110 to 0111

Use No. 110 for Sash hung on sides: No. 111 for Sash hung on top and bottom.

Note—Be sure and make the Bottom Rail of Sash from 4 inches to 6 inches wide.



No. 110
Patented Feb. 6th, 1900

No. 111
Detail Page 32

Howarth Sash Centers

Nos. 110 to 0111

These Centers are intended to hang Sash top and bottom or on the sides. They are a good, strong, serviceable Center and are easily applied. These Centers have a Thumb Screw which will hold the Sash at any angle without the use of an adjuster.

How to Apply Centers

Use a Hanging Stile in connection with these Centers. This Hanging Stile should be rabbetted the entire length on the inside, $5/16$ inch wide and half the thickness of Sash deep, the Sash rabbetted the same. When Sash and Hanging Stile are put together the combined width of the rabbet will be $5/8$ inch. Make a moulded stop to fill this rabbet and where the Sash are hung on sides nail this stop in the rabbet of the Sash above the Center and in the rabbet of the Hanging Stile below the Center. This will form a reverse rabbet. Cut the stop near the Center as shown on detail page 32 before nailing in place.

When Sash are hung on top and bottom make the bottom rail of Sash from four to six inches wide, according to size of Sash.

IRON—DEAD BLACK.

Special
Finishes
See Below

No. 110 for sash hung on sides..... per set, \$0.60

\$1.40

No. 111 for sash hung top and bottom....per set, 1.25

2.05

CAST BRASS—POLISHED.

No. 0110 for sash hung on sides.....per set, \$2.70 \$3.35

No. 0111 for sash hung top and bottom....per set, 4.00 4.75

ONE SET PACKED IN EACH BOX—Brass and Plated goods packed with screws.

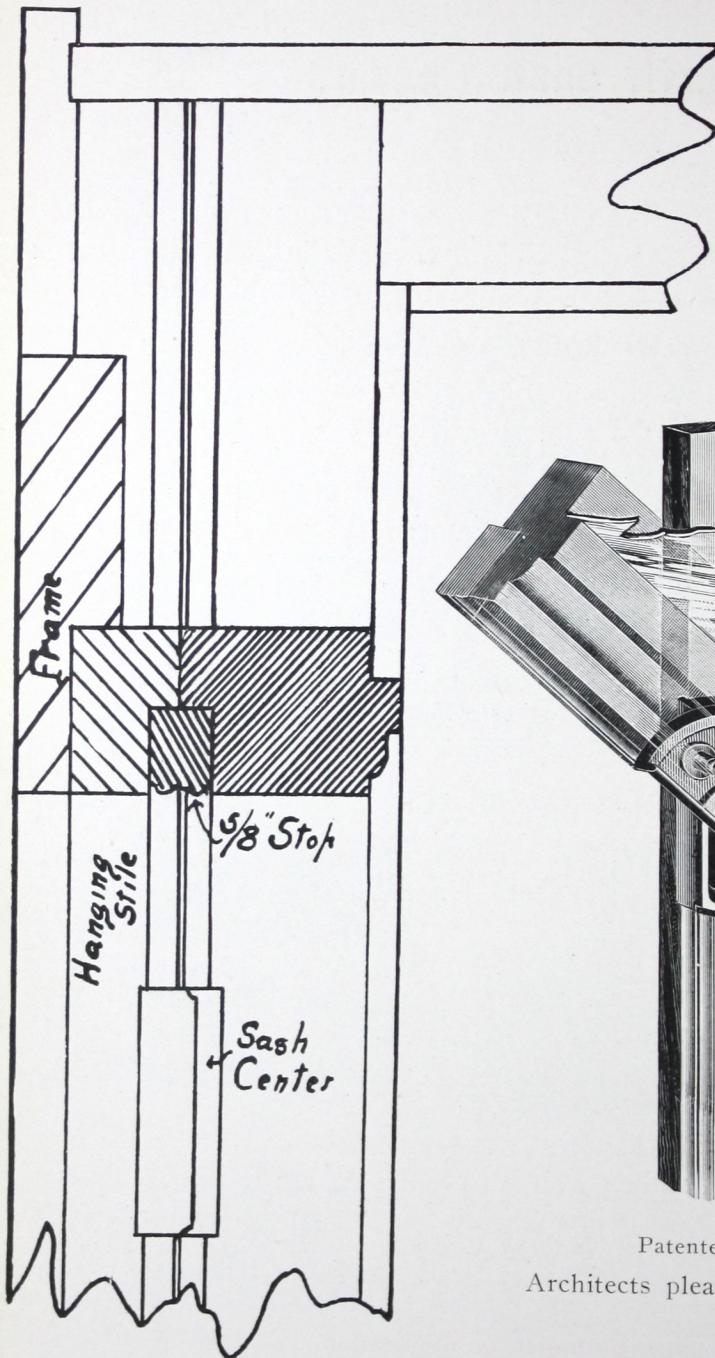
For Detail See Page 32.

SPECIAL FINISHES:—Price List for special finishes in Iron List above is for iron centers finished in Polished Brass, Bronze, Antique Copper or Sanded Statuary Brass.

Price List for special finishes in Brass List is for Brass centers finished in Bronze, Nickle or Sanded Statuary Brass.

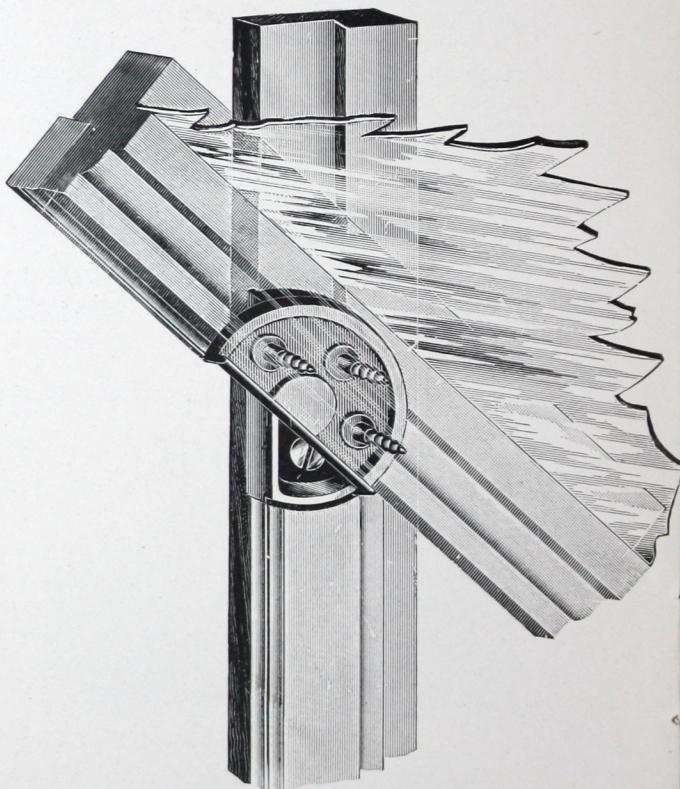
Prices on other finishes quoted on application.

TELEGRAPH CODE PAGE 36.



Half Size Detail, No. 98

**Howarth Sash
Centers
Nos. 97 to 098
For Transoms**



Patented Sept. 5, 1899.
Architects please specify by Number.

Howarth Sash Centers

Nos. 97 to 098

This Center is particularly adapted for transom Sash. It is strong and weather-proof; is quickly and easily applied, and the tight rabbetted joint excludes both weather and sound, making it especially adapted for **outside** and **inside transoms**.

You will note on detail on opposite page that the Sash and Hanging Stile are rabbetted their entire length from top to bottom on the inside and a stop $\frac{5}{8}$ inch wide is nailed in the rabbet of the Sash above the Center and in the rabbet of the Hanging Stile below the Center to form a reverse rabbet. Fit and screw Center to Sash and Hanging Stile before stops are nailed in place.

Fit Centers to Sash and Hanging Stile at the factory before Sash are brought to the building.

IRON—DEAD BLACK.

Special
Finishes
See Below

No. 97, $1\frac{3}{8}$ to $1\frac{3}{4}$ inch sash.....per set, \$0.70

\$1.35

No. 98, $1\frac{3}{4}$ to $2\frac{1}{2}$ inch sash.....per set, .90

1.55

CAST BRASS—POLISHED.

No. 097, $1\frac{3}{8}$ to $1\frac{3}{4}$ inch sash.....per set, \$1.40

\$2.05

No. 098, $1\frac{3}{4}$ to $2\frac{1}{2}$ inch sash.....per set, 1.60

2.25

ONE SET PACKED IN EACH BOX--Brass and Plated goods packed with screws.

For Detail See Page 22.

SPECIAL FINISHES:—Price List for special finishes in Iron List above is for iron centers finished in Polished Brass, Bronze, Antique Copper or Sanded Statuary Brass.

Price List for special finishes in Brass List is for Brass centers finished in Bronze, Nickle or Sanded Statuary Brass.

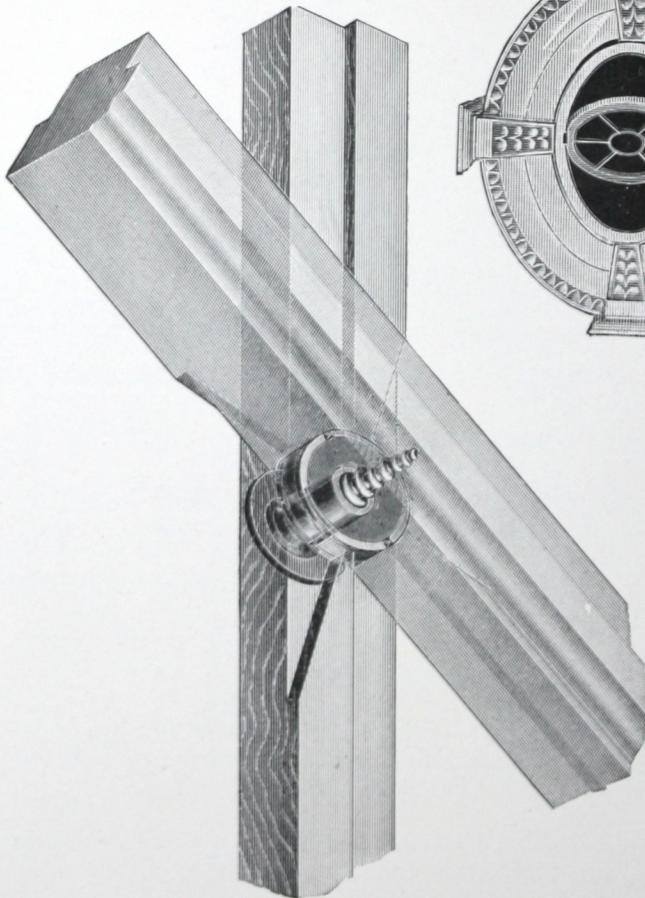
Prices on other finishes quoted on application.

TELEGRAPH CODE PAGE 36.

Howarth Sash Centers

Nos. 1 to 03

For Oval or Circle Windows



Architects please specify by number.

See Detail Page 33.

Howarth Sash Centers

Nos. 1 to 03

For Oval or Circle Windows

This is a tight joint Center and can be used for Oval or Circle windows hung on sides. Hanging Stiles should be used with these Centers rabbetted on the inside; Sash should also be rabbetted on the inside plant stop in rabbet, nailing same to the Sash above the Center and to the Hanging Stile below the Center, forming a reverse rabbet (see detail page 33).

Sash and Hanging Stile can also be reverse rabbetted on the solid as shown on cut on opposite page.

IRON

No. 1 for 1 $\frac{3}{8}$ inch sash.....	per set, \$0.55
No. 2 for 1 $\frac{3}{4}$ inch sash.....	per set, .65
No. 3 for 2 $\frac{1}{4}$ inch sash.....	per set, .75

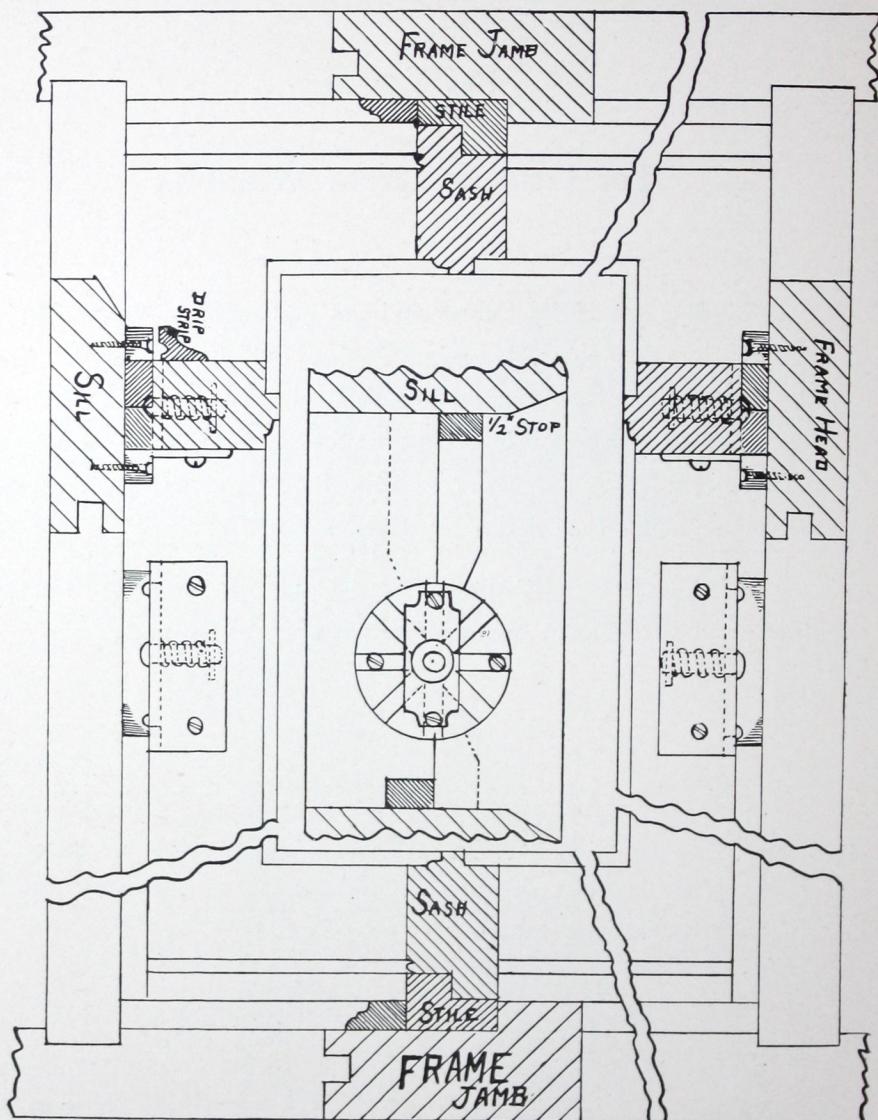
CAST BRASS

No. 01 for 1 $\frac{3}{8}$ inch sash.....	per set, \$0.60
No. 02 for 1 $\frac{3}{4}$ inch sash.....	per set, .80
No. 03 for 2 $\frac{1}{4}$ inch sash.....	per set, 1.20

Packed with Screws.

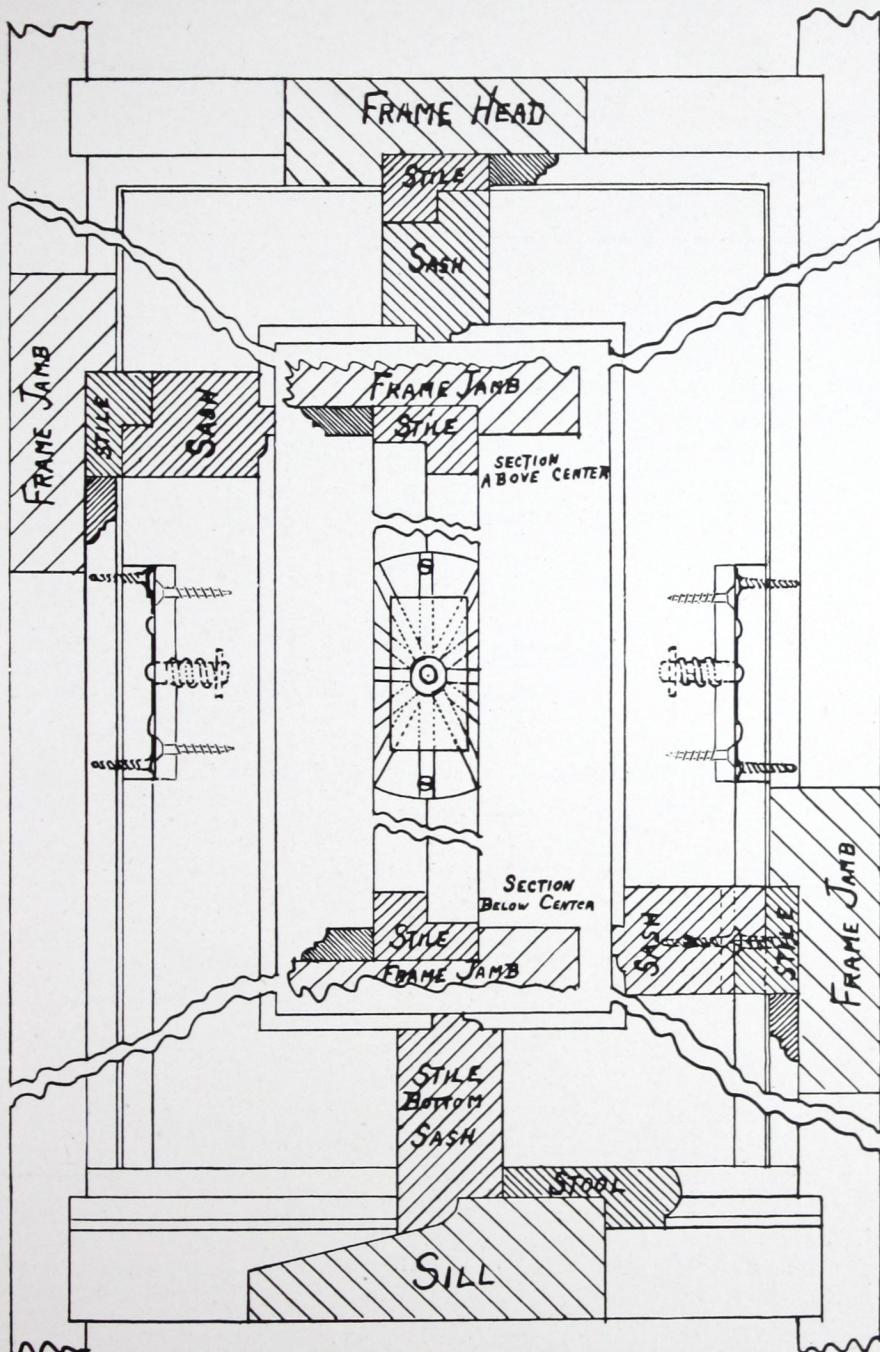
Detail page 33.

Prices for special finishes quoted on application.

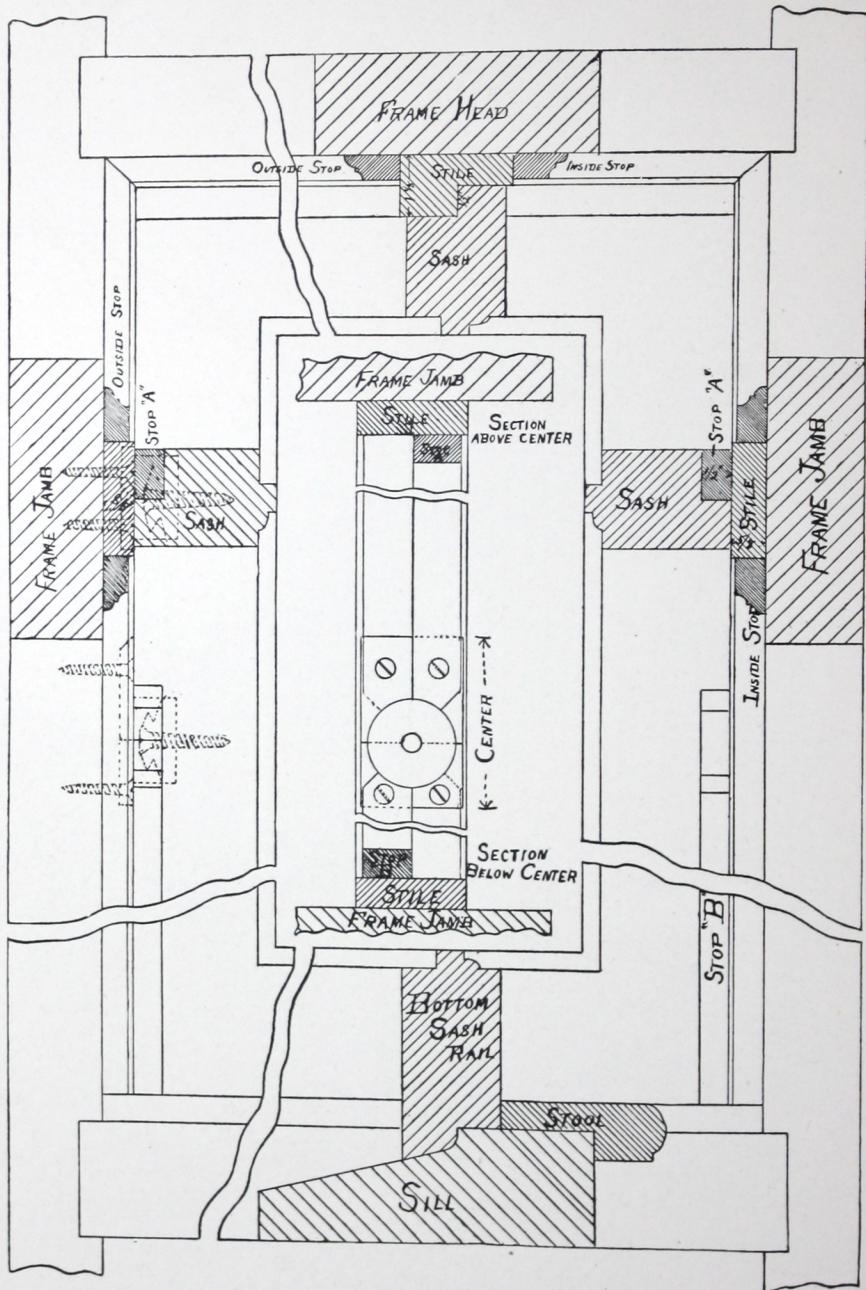


Detail of No. 600 Class of Centers

See pages 6 and 7.

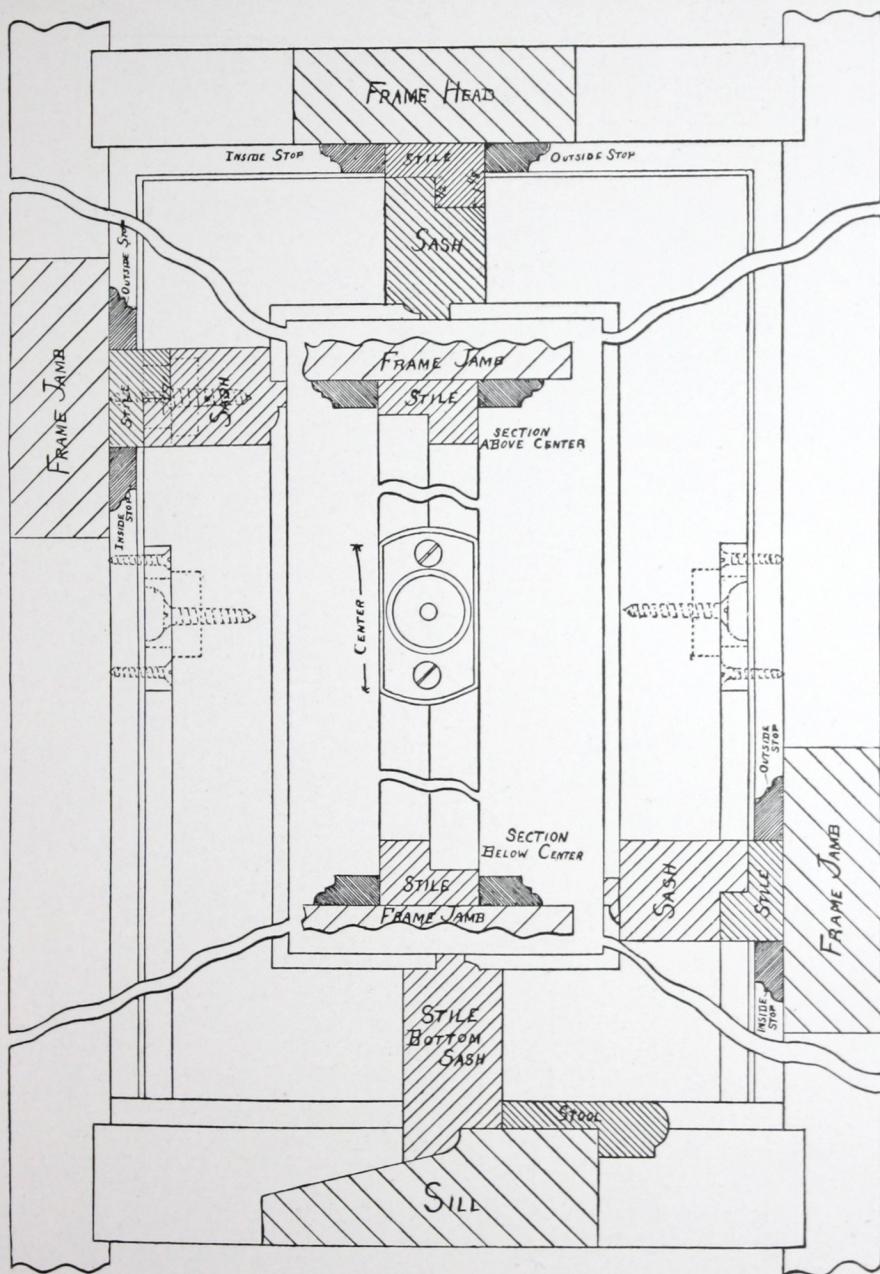


Detail of No. 300 Class of Centers
See pages 8, 9, 10 and 11.



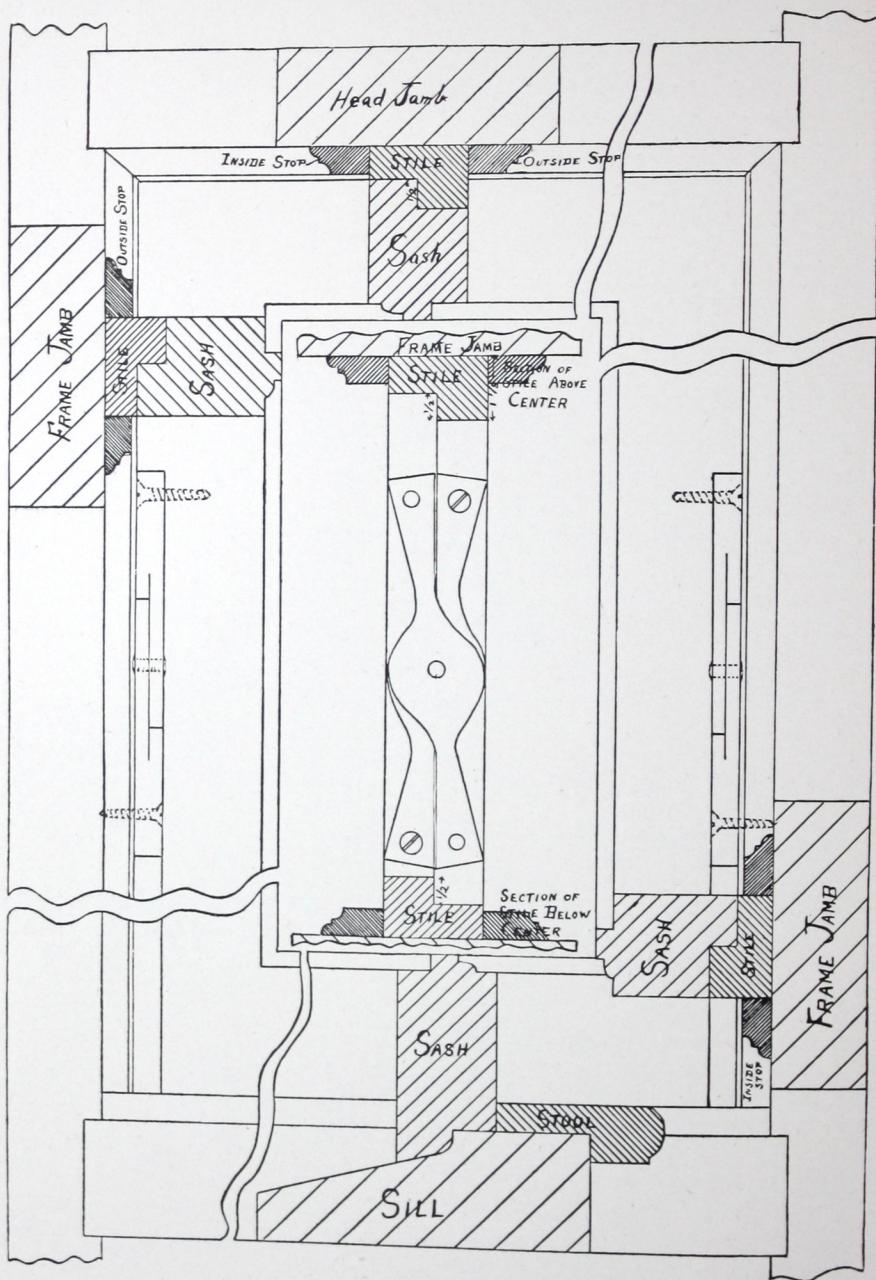
Detail of No. 50 Class of Centers

See pages 12 and 13.

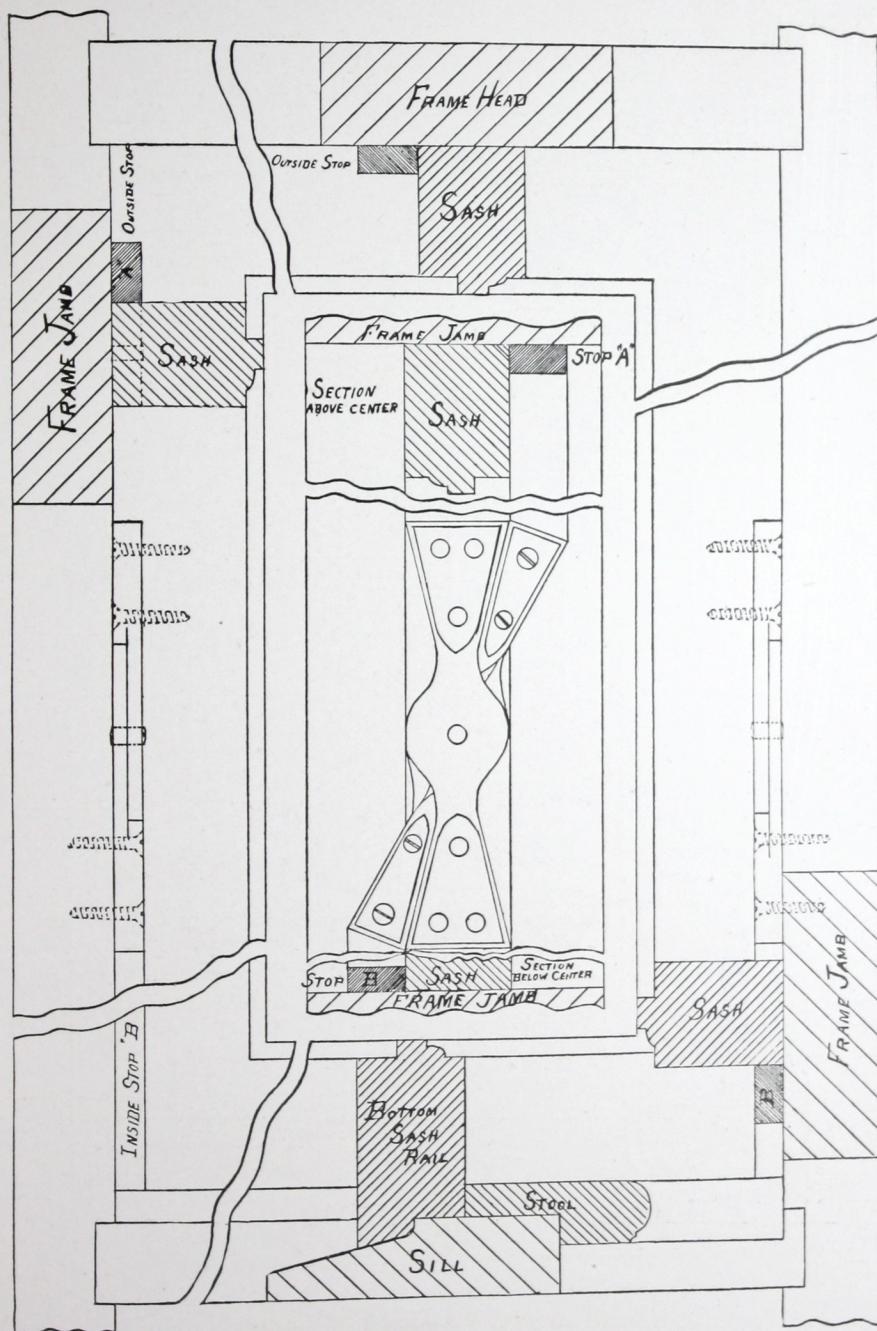


Detail of No. 30 Class of Centers

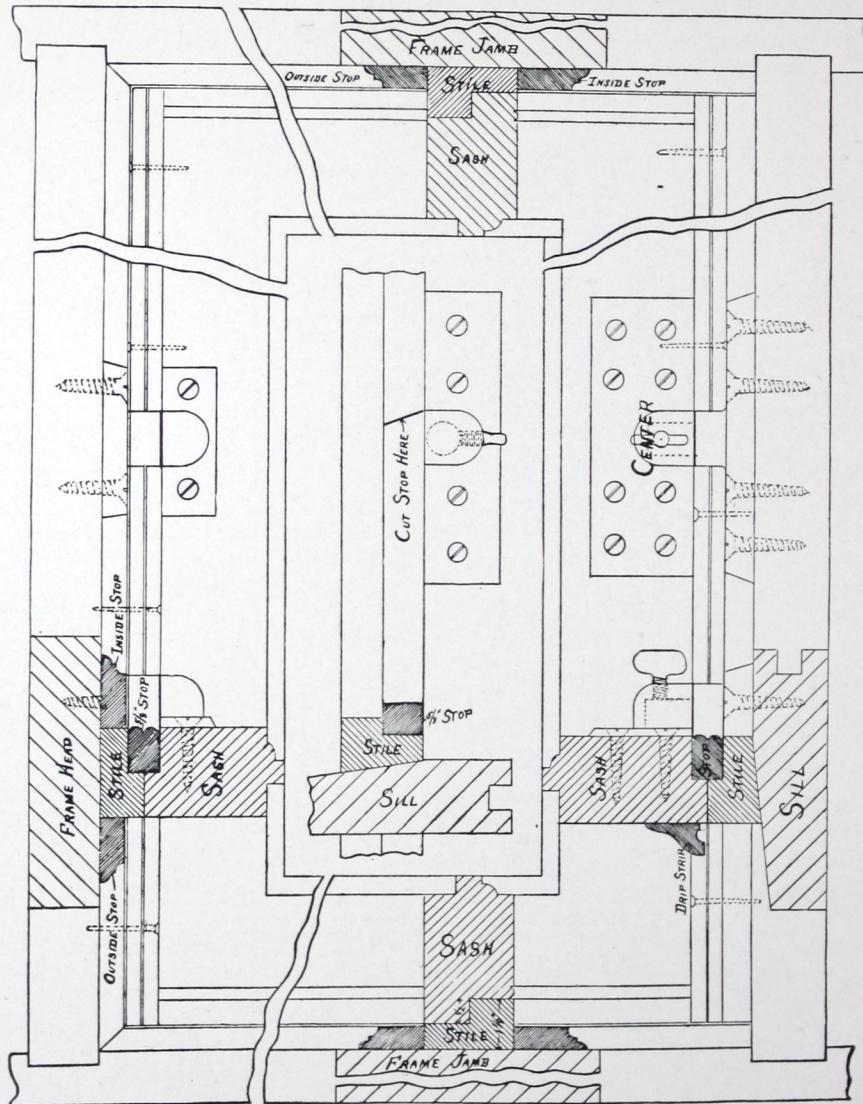
See pages 14 and 15.



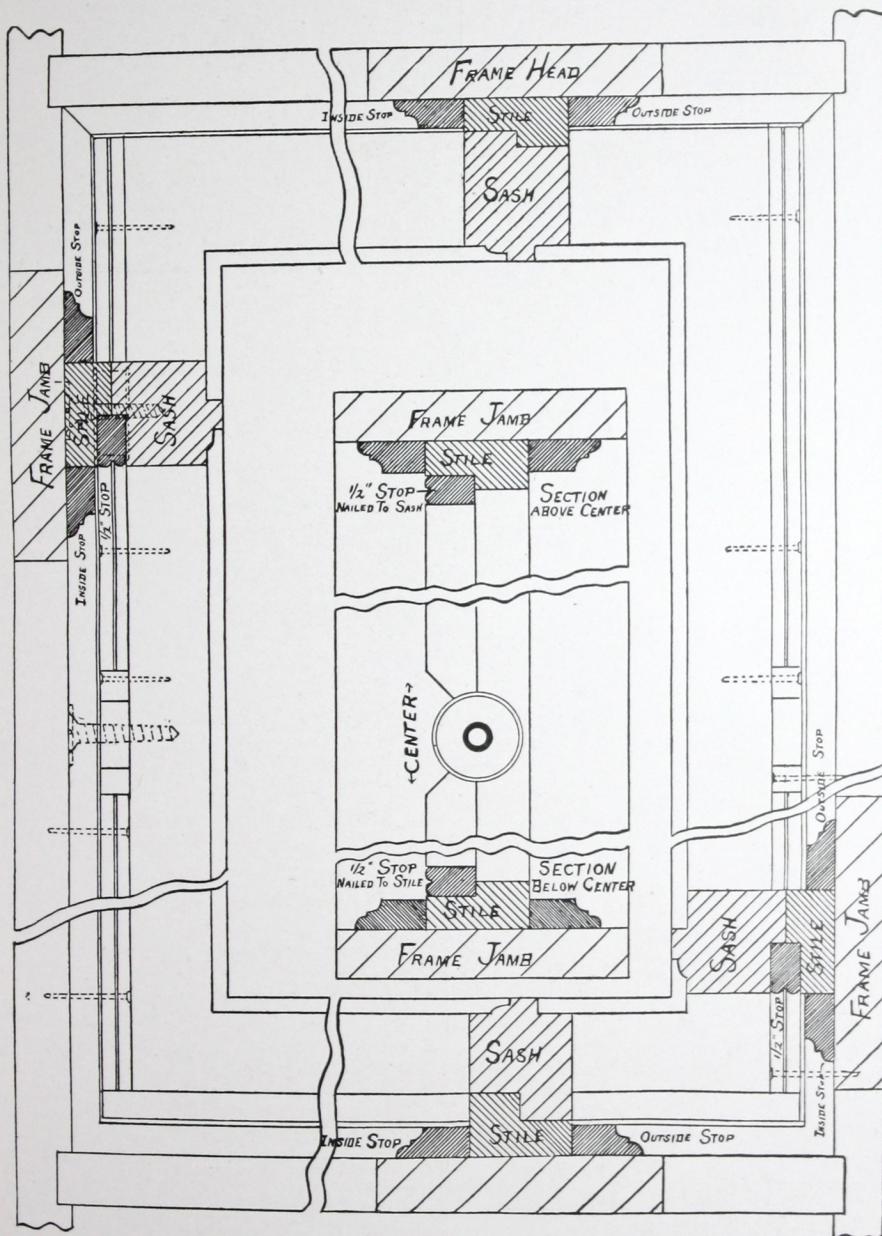
Detail of No. 10 Class of Centers
See pages 16 and 17.



Detail of No. 20 Class of Centers
See pages 18 and 19.



Detail of No. 111 Center
See pages 20 and 21.



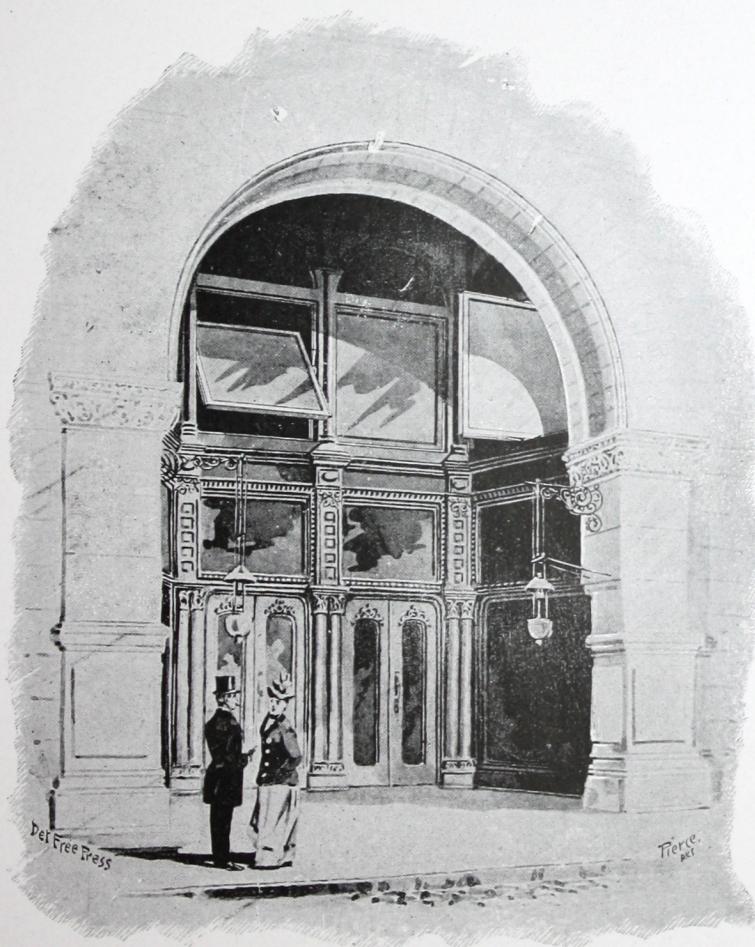
Detail of No. 1 Class of Centers

See pages 24 and 25.

Where Howarth Sash Centers Are Used



Where Some of Howarth Sash Centers Are Used



Vestibule of the J. L. Hudson Building, Detroit, Mich.

Telegraph Code

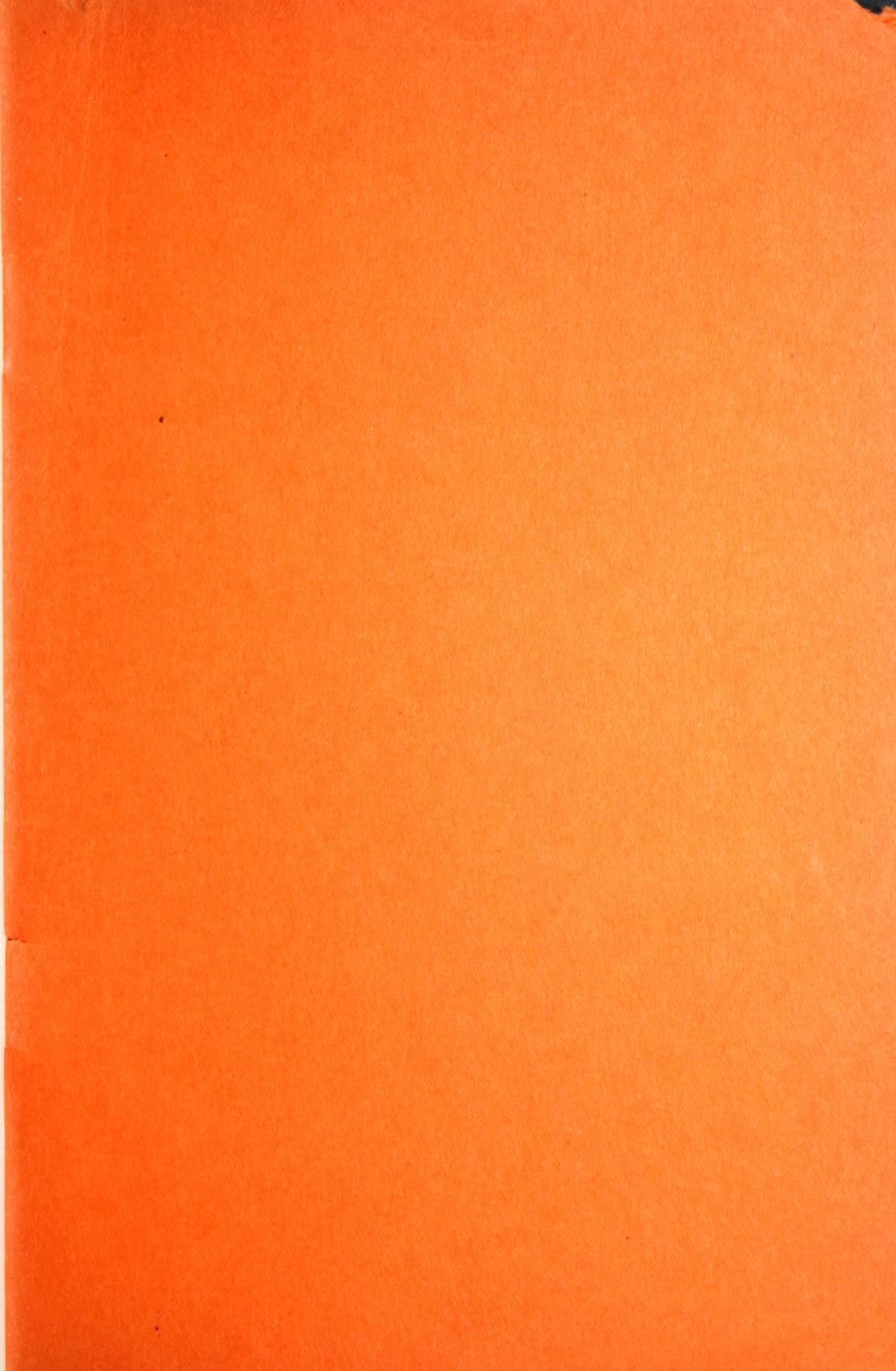
Iron

No. 600B	Abandon
No. 600	Abase
No. 601	Acme
No. 602	Adhere
No. 603	Alert
No. 604	Amber
No. 300A	Babe
No. 300	Beach
No. 301	Bide
No. 302	Bland
No. 303	Blast
No. 304	Block
No. 305	Blank
No. 306	Baltic
No. 50	Case
No. 51	Cedar
No. 52	Chart
No. 30	Dab
No. 31	Dean
No. 32	Dial
No. 33	Disbar
No. 33½	Dive
No. 34	Decade
No. 10	Easel
No. 11	Ebony
No. 12	Echo
No. 20	Fang
No. 21	Feast
No. 22	Field
No. 87	Gain
No. 110	Habit
No. 111	Hedge
No. 1	Idle
No. 2	Impose
No. 3	Incase
No. 97	Jar
No. 98	Jeer

Brass

No. 0600B	Anchor
No. 0600	Apart
No. 0601	Arbor
No. 0602	Ashore
No. 0603	Atone
No. 0604	Avail
No. 0300A	Boast
No. 0300	Boiler
No. 0301	Bolt
No. 0302	Boom
No. 0303	Braid
No. 0304	Buster
No. 0305	Button
No. 0306	Butter
No. 050	Clip
No. 051	Coat
No. 052	Craft
No. 030	Doff
No. 031	Develop
No. 032	Drab
No. 033	Dessert
No. 033½	Duke
No. 034	Deacon
No. 010	Edge
No. 011	Endure
No. 012	Excell
No. 020	Flag
No. 021	Foal
No. 022	Frail
No. 087	Grand
No. 0110	Hickory
No. 0111	Hurdle
No. 01	Involve
No. 02	Inwrap
No. 03	Ivory
No. 097	Join
No. 098	Juggie

Referring to your letter of.....
 Referring to your telegram of.....
 Quote best price by wire, f. o. b. Detroit, on.....
 Quote best price by mail, f. o. b. Detroit, on.....
 We quote a net price, f. o. b. Detroit, on your inquiry of.....
 How soon can you ship.....
 Have you in stock.....
 After receipt of order can ship in.....
 Ship by express.....
 Ship by freight.....
 Ship by parcel post.....
 When will you ship our order.....
 We expect to ship your order.....
 We shipped by freight.....
 We shipped by express.....
 We shipped by parcel post.....



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